

Bettman (13).

The spectacle treatment
of hypermetropia.



Bettman (B)

Reprinted from the North American Practitioner, 1894, VI.

THE SPECTACLE TREATMENT OF HYPERMETROPIA.

By Boerne Bettman, M.D.

Professor of Ophthalmology in the Post-Graduate Medical School; Oculist and Aurist to the Michael Reese and German Hospitals; Attending Surgeon to the Illinois Charity Eye and Ear Infirmary; Professor of Ophthalmology and Otology in the College of Physicians and Surgeons, Chicago.

The correction of errors of refraction has given rise in this country to long-continued controversy. Opinions of diverse nature have been more or less ably expressed by more or less able men. So keenly has the war been waged that for a time, at least, our fellow colleagues seemed to have lost sight of every other department of ophthalmology but that dealing with the fitting of glasses. A noted eastern oculist stated to me last summer that "the refraction craze is converting oculists into expert opticians."

Hostilities are gradually ceasing but an occasional feeble blast is still heard. In passing over the battle field now that the heat of the conflict has subsided, the much debated question can be more calmly investigated. Two questions only which have figured conspicuously in this discussion will occupy our attention. Furthermore we will restrict ourselves in this connection to the spectacle treatment of hypermetropia. Should such cases receive full correction, *i. e.*, shall the total amount of the error as exhibited under atropine or hematropine be attended to, or shall partial correction suffice? In other words shall we force (or rather try to) the patient to relax his accommodation or permit him to relax the stubborn muscle at his leisure. Many oculists adopt the former alternative and with the enthusiasm of fanatics insist upon full compliance with this rule.

All hypermetropes, who have not reached middle age, after being thoroughly atropinized or hematropinized are told to wear lenses which fully neutralize their ametropia. Some obey, and after a struggle between loss of comfort and faith in their medical advisor, either obtain relief or discard their glasses and apply to another specialist. A number will accept full correction immediately and experience no difficulty. Many will not endure a moment's discomfort and immediately demand a change. The followers of the school of partial correction adopt equally strict and dogmatic measures. Some correct all of the manifest plus one-fourth of the latent hypermetropia in conformity with the literal interpretation of Donders. Others add +0.5 D. or more to the manifest hypermetropia depending upon the degree of refractive error and the rules by which they are guided.



Both schools claim the better results from their respective methods. Both present tables of statistics which bear out their views. To the uninitiated this state of affairs will appear paradoxical and strange, and like the hero of old he will find himself on a turbulent stream steering between Charybdis and Scylla, in danger of harm no matter which way he turns.

The experienced physician, the veteran who has escaped unharmed the missiles of theoretical controversies, closes his eyes and ears to the charms and sweet melodies of the rival sirens, firmly grasps the helm and glides quietly down the placid current of practical experience. Long continued observation will demonstrate that theories in medicine, permissible as a working basis, often do not harmonize with clinical teachings. The beginner, however, and for him are these lines especially prepared, requires a guide-post to point out the path of practical ophthalmology. He should be reminded of the fact that every case must be treated *per se*. That although a number of hypermetropes exhibit a uniformity of symptoms and are amenable to a stereotyped treatment, that the individuality must not be lost sight of. Temperament, occupation, and bodily conditions are not without their influences in the acceptance of glasses. The essayist recalls distinctly cases of hysterical anemic females who experienced great relief by wearing + 0.5 D., and others, healthy, robust individuals, who would not tolerate + 1. D. The anatomical condition of the ciliary muscle in hypermetropia has not received the attention which in our opinion it deserves and it seems that the entire controversy must fall to the ground if credence can be given to the discoveries of Ivanoff. He found that in a number of hypermetropic eyes an increase of the circular, the orbicular fibres of the ciliary muscles and an absence of them in myopic eyes. Ivanoff is careful, however, to state that these conditions were not usually present in all ametropic eyes. His observations, both positive and negative, have been confirmed by later researches.

This hypertrophy of the circular Mueller's fibres may account for the impossibility of entire relaxation of the accommodation in many cases. The natural tonicity of the muscle is greater; it is this inherent action to make less tense the suspensory ligament and permit the elastic lens to assume a greater curvature. When the cycloplegic effects of the alkaloids have vanished, it will reassume its shape, possibly not in the same degree, but will always relax the suspensory ligament more than the less hypertrophied muscle will. If this is so, full correction cannot be worn. The disciples of full correction might answer: long continued uses of the glass will *eventually* overcome the trouble. Ah! there is the rub. In the first place *how long a use* is required, and if success crowns their efforts was it a case of spasm or hypertrophy of the ciliary muscles they were dealing with?

It is not our purpose to discuss these matters, however, but rather to point out a method for correction of hypermetropia which we have employed with satisfaction for years. In one word, make the patient *comfortable*.

In order to do this it is essential to eradicate the spasm of the ciliary muscle induced by excessive and long continued accommodation. Instillations of mydriatics more or less often repeated will have the desired effect. After the total degree of the error has been ascertained the last examination should be undertaken immediately after the muscle of accommodation has regained its normal condition. In other words, as soon as the patient can read fine print at twelve inches. Prescribe now the strongest convex glass the patient will accept, with which the best vision for distance can be obtained. It will be observed in the majority of cases that the manifest hypermetropia exhibited at the third examination is greater than at the first and less than the total. For example, a patient accepts $+1$ dioptic, under hematropine the total error is shown to be $+2.5$ dioptic. Two days later $+1.5$ dioptrie is the strongest glass with which the best vision can be obtained. The addition of $+0.25$ D. renders sight slightly hazy and may give rise to a feeling of uneasiness. In conformity with our desire to render the seeker for relief comfortable, we order $+1.5$ dioptrie, with the parting instruction and information to call again in two or three months to have the glasses changed for possibly a stronger pair. This will not be necessary in the majority of cases, especially in those where atropine was employed, where the accommodation was thoroughly paralyzed. The one unneutralized dioptic may indicate the extra tonicity of the ciliary muscle, its super-normal contractile power, due to the greater development and size of the circular so-called Mueller's fibres. If at the next visit a stronger glass is accepted prescribe it.

This method of correcting farsightedness is not only humane but is extremely practical. The hypermetropie obtains immediate relief, is able to continue with his work and feels more satisfied with the efforts of his physician. Opticians, prevented by law from using atropine, may ascribe their frequent success in fitting hypermetropia to the legal restrictions. Correction of the manifest error is in nine cases out of ten more beneficial than total correction.
